R. H. FISCHER.

ACTUATING MECHANISM FOR AUTOPNEUMATIC PIANOS.

APPLICATION FILED DEC. 10, 1908.

913,002. Patented Feb. 23, 1909.

Fig. 1.

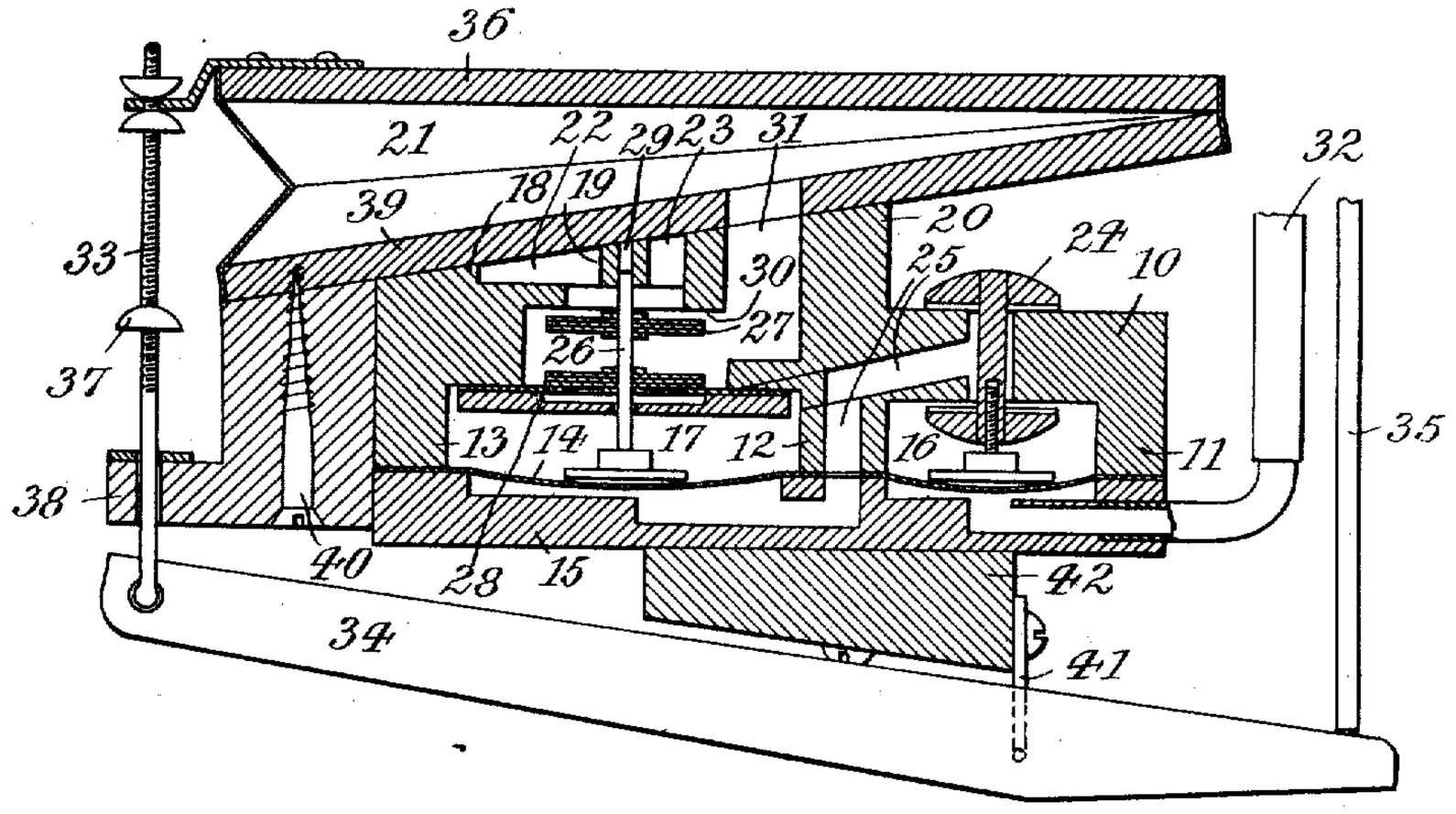


Fig. 2.

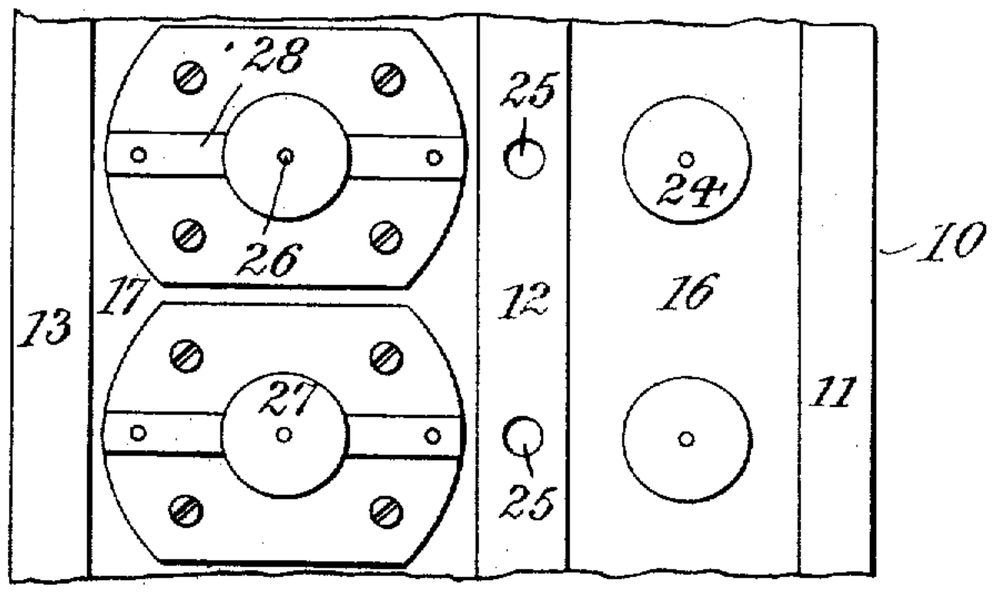
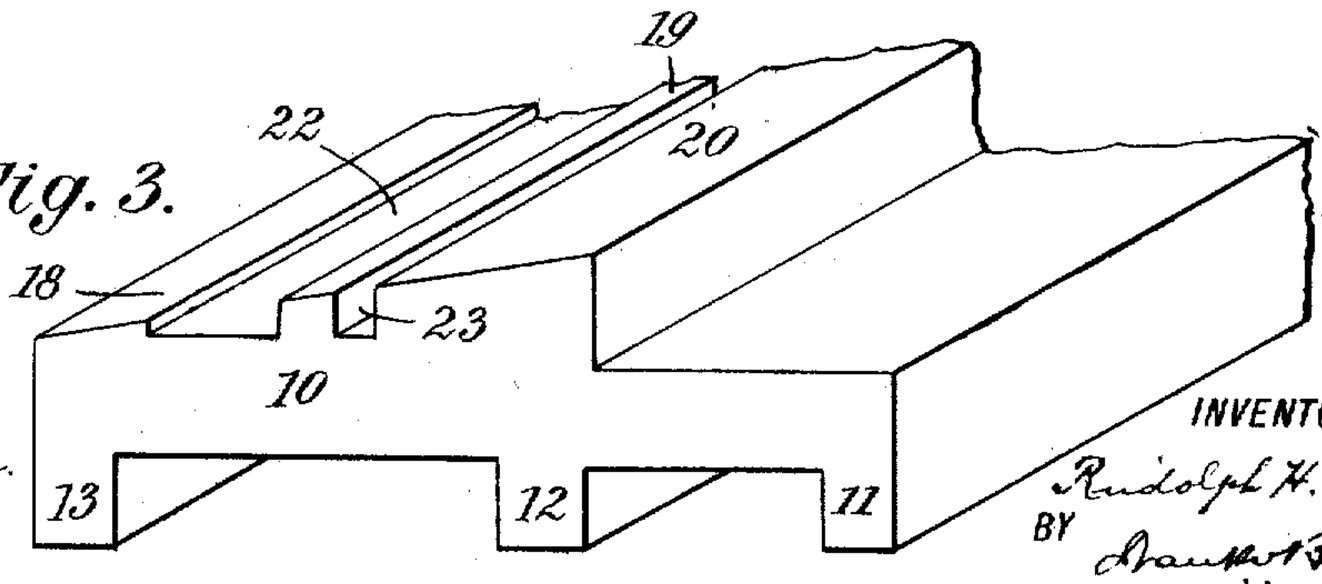


Fig. 3.



WITNESSES

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ACTUATING MECHANISM FOR AUTOPNEUMATIC PIANOS.

No. 913,002. Specification of Letters Patent. Patented Feb. 23, 1909.

Application filed December 10, 1908. Serial No. 466,909.

To all whom it may concern:

Be it known that I, RUDOLPH H. FISCHER, a citizen of the United States, residing at New York city, Bronx, county and State of New York, have invented new and useful Improvements in Actuating Mechanism for Autopneumatic Pianos, of which the following is a specification.

This invention relates to an actuating mechanism for autopneumatic pianos and piano players which is so constructed that the valve bar, *i. e.*, the bar supporting the primary and secondary valves is composed of a single strip of wood profiled by being passed through a suitable molding machine. In this way the construction of the device is simplified, while strength, tightness and compactness is insured.

In the accompanying drawing: Figure 1 is a vertical transverse section of my improved actuating mechanism; Fig. 2 a bottom view of part of the valve bar, and Fig. 3 a perspective view of the valve bar, showing its profile after leaving the molding machine and before the formation of the ports.

The valve bar 10 is provided with three integral depending parallel ribs 11, 12, 13, which, in conjunction with the usual diaphragm 14 and bottom plate 15, form the primary vacuum chest 16 and the secondary vacuum chest 17. From the top of bar 10 extend, near the front thereof, three integral beveled supports 18, 19, 20, upon which the pneumatic 21 is seated, and which are separated from each other by air channels 22, 23. The primary valve 24, mounted in bar 10, controls air port 25 leading through rib 12 below the diaphragm of secondary vacuum chest 17. The stem 26 of the secondary valve 27 engages a bearing 28 and is guided within an aperture 29 formed in support 19. Valve 27, when raised against its seat 30, closes communication between channels 22, 23 and a port 31 leading to pneumatic 21.

When air is admitted through tube 32, (which is controlled by the music sheet), below diaphragm 14 of primary vacuum chest 16, valve 24 is raised to admit air by port 25 below the diaphragm of secondary vacuum chest 17. In this way valve 27 will be raised to establish communication between chest 17 and pneumatic 21 by port 31, so as to collapse the pneumatic. The latter actuates the hammer by suitable intervening mechanism such as rod 33, lever 34 and lifter 35. When air is excluded from tube 32, pneumatic 21 will be expanded through the descent of valve 27 which reëstablishes communication between channels 22, 23 and port 31, so as to admit air to the pneumatic.

Rod 33 is connected to top board 36 of pneumatic 21 in suitable manner and carries a regulating button 37 adapted to engage a thumper rail 38 which is secured to the bottom board 39 of the pneumatic by screws 40. Lever 34 is fulcrumed to an arm 41, depending from a lever rail 42 which is secured to bottom plate 15.

In shaping valve bar 10, a rail having the proper cross section is drawn through a molding machine, the cutters of which so groove the bar as to form the three depending integral ribs 11, 12, 13, and the three upwardly extending rests 18, 19, 20. After the bar has thus been profiled, in the manner desired, it is bored to form the necessary ports, valve seats, etc., and then the various valves and other accessories are fitted in position.

I claim:

1. In a device of the character described, a valve bar having three integral depending parallel ribs, combined with a diaphragm engaging the ribs and forming together therewith a pair of vacuum chests, substantially as specified.

2. In a device of the character described, a valve bar having three integral upwardly extending beveled supports, a pneumatic seated upon said supports, and a valve having a stem that engages the central support, substantially as specified.

3. In a device of the character described, a valve bar having three integral depending ribs and three integral upwardly extending beveled supports, combined with a diaphragm engaging the ribs, and a pneumatic seated upon the supports, substantially as specified.

Signed by me at New York city, (Manhattan,) N. Y., this 9th day of December, 1908.

RUDOLPH H. FISCHER.

Witnesses:

FRANK V. BRIESEN,

W. R. SCHULZ.